



March 29, 2013

To: Executive Board

Subject: **Proposed Service Enhancements**

**Recommendation**

Provide direction regarding the recommended service enhancements that are proposed for the Fall 2013 service change to improve the customers' experience.

**Summary**

This item has been prepared in a "study session format". It is intended to be comprehensive and provide the Board with enhanced details regarding Foothill Transit's service enhancement options.

In order to provide existing customers a better customer experience as well as attract new riders, this proposal was developed to increase service and extend operating hours on various lines. These enhancements will also help to reduce the region's greenhouse gas emissions as mandated by Senate Bill 375. Foothill Transit has \$2.3 million in funds derived from Measure R to enhance services. Several local lines have been identified that could benefit from service enhancement. All Foothill Transit lines were ranked according to schedule adherence and comments received and the top ranked lines were further studied. The recommendations are as follows:

Line	Option	Cost	Discussion
178	Moderate	\$406,396.61	<ul style="list-style-type: none"> <li>➤ Increase frequencies from 30 minutes to 20 minutes on the weekday, from 10:00 a.m. to 4:00 p.m. This is the period with highest ridership.</li> <li>➤ Extend night service an additional hour to coincide with mall closing hours, on weekdays.</li> </ul>
185	Moderate	\$126,724.56	<ul style="list-style-type: none"> <li>➤ Add 6 trips to standardize headway to 30 minutes between 9:50 a.m. and 12:45 p.m on weekdays.</li> <li>➤ Extend night service an additional hour to match mall hours on weekdays.</li> </ul>
187	Limited Stops	No additional cost for service	<ul style="list-style-type: none"> <li>➤ Enhance trip speed and create a limited stop variant on the same route to reduce trip time and improve schedule adherence.</li> </ul>
195	Conservative	\$65,722.15	<ul style="list-style-type: none"> <li>➤ Add 3 trips each way during the week between 9:45 a.m. and 1:45 p.m. to fill the gap in service.</li> <li>➤</li> </ul>



281	Conservative	\$190,098.78	➤ Increase frequency to 20 minutes between 6 a.m. and 10 a.m. and 2 p.m. and 5 p.m. on weekdays. These periods have high ridership and are the times when people are commuting to and from work.
286	Moderate	\$80,654.65	➤ Extend operating hours to coincide with 1) service times of buses operating out of Pomona TransCenter and, 2) closing of Brea Mall.
289	Conservative	\$98,330.51	➤ Extend operating hours on weekday evenings to ensure that the ridership program at Mt. San Antonio College can be successful in generating increased ridership.
480	Moderate	\$371,969.47	➤ Increase frequency to 20 minutes between 7 a.m. and 9 a.m. and 3 p.m. and 5 p.m. during the week; Increase frequency to 30 minutes between 9:30 a.m. and 1:30 p.m. during the week. These are the busiest travel times for the line.
482	Moderate	\$40,113.94	➤ Additional stop serving Industry Metrolink station on the weekdays to coincide with the opening of the Industry Park and Ride. ➤ Additional trip in the morning serving Industry Metrolink station on the weekdays to coincide with the opening of the Industry Park and Ride.
486	Limited Stops	No additional cost for service	➤ Enhance trip speed and create a limited stop variant on the same route to reduce trip time and improve schedule adherence.
492	Moderate	\$388,383.12	➤ Increase frequency to 20 minutes between 6 a.m. and 8 a.m. and 10 a.m. and 5 p.m. during the week. These are the busiest travel periods for the line.
<b>Total</b>			<b>\$1,768,393.79</b>

**Section 1: Introduction**

**Proposed Enhancements and Source of Funding**

Public transit serves many roles and purposes; the first and most visible purpose, is to provide those without access to automobiles a means by which to travel. According to American Fact Finder, 7.3 percent of Los Angeles County commuters use public



transportation to get to work. Sixty-four percent of commuters using public transportation have 1 or 0 cars in their household; 75 percent make \$24,000 a year or less; and 41 percent live at 150 percent or less of the poverty line. For those who are not privileged enough to either own a car or have access or ability to drive one, transit is their lifeline to all other activities and appointments. Foothill Transit receives many comments requesting additional service because public transit plays a crucial link in ensuring our customers' ability to conduct normal activities at a level competitive with cars. Many potential riders do not use our service because it is not competitive with the car, while those who do interface with a service that can at times be slow or inefficient. In fact, according to the American FactFinder, the mean travel time for those commuting in their car is 27.8 minutes versus 49.3 minutes for those on transit.

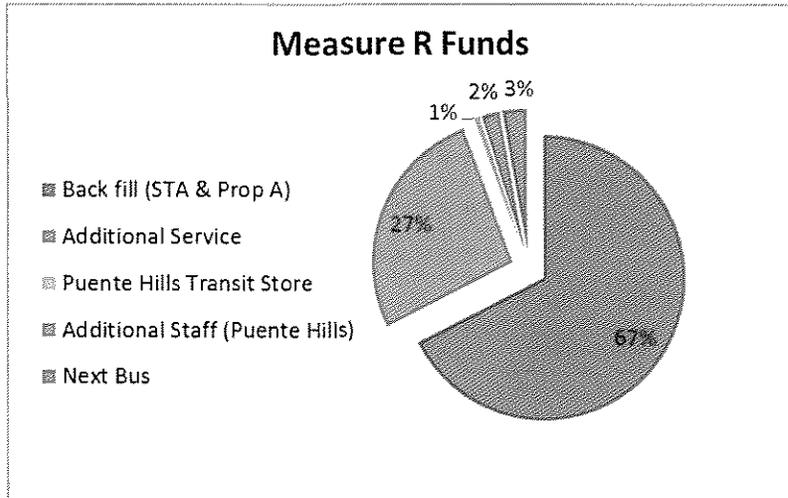
While our society has been car-oriented for at least the past 50 years, transit is making a comeback. Boardings have increased nationwide for transit systems, and Foothill Transit is no exception. However, Foothill Transit's growth in boardings has not been at the same rate as other agencies in the region or nationally. In 2010, many strategic cuts were made to avoid a budget deficit which left many Foothill Transit lines with inconsistent headways making the system inconvenient to use for daily life. In addition, Foothill Transit's customer base has most likely grown since 2010 necessitating additional service on certain lines.

Finally, the passage of Senate Bill 375 and the approval of the Southern California Association of Governments' (SCAG) Regional Transportation Plan in 2012 require the region, by law, to reduce greenhouse gas (GHG) emissions from passenger vehicles 8 percent by the year 2020. The reduction in GHG comes mainly through a reduction in vehicle miles traveled (VMT). SCAG recommends reducing VMT by focusing jobs and housing in the region's High Quality Transit Areas (HQTA) so that more trips can be conducted through walking, biking or public transit as opposed to the automobile. SCAG defines HQTAs as an area "within a ½ mile of a well-served transit stop, and includes transit corridors with minimum 15-minute or less service frequency during peak commute hours." According to this definition, only Foothill Transit's commuter lines meet the frequency threshold – however as the commuter lines have very few stops (fewer than 10 per line) not as many people are able to access this high-quality service. Thus, it falls upon the local lines, which crisscross much of our service area and include scores of stops per line, to act as the primary means in which HQTAs can be brought about. With the proposed service enhancements of increasing service frequencies and extending operating hours on the local lines, Foothill Transit will be in a position to attract more riders to the system and deliver a High Quality Transit Area to the San Gabriel Valley region. More people on buses means less people in cars on the street, resulting in less traffic, less congestion and less pollution. This combined with the fact that Foothill Transit will soon have an all-CNG/Electric fleet means that should the service enhancements be implemented, the agency will be playing an important role in reducing the region's GHG and in improving the quality of life for all residents.



**Measure R**

These service enhancements are possible due to funds available from Measure R. Measure R is a half-cent sales tax that was approved by Los Angeles County voters in 2008. The tax went into effect in July 2009, and is set to expire in 2039. The purpose of Measure R is to improve transportation in Los Angeles County, and regionally to the tune of \$40 billion over the next thirty



years. The measure would provide funding that would make “public transportation more convenient and affordable” while improving the “quality of life” for Los Angeles County residents. In addition to building new transit projects, and enhancing existing transit, money will be used by local jurisdictions for projects such as pothole repairs, major street resurfacing, left-turn signals, bikeways, pedestrian improvements, streetscapes, traffic signal synchronization and local transit services. The funds can only be used for operating expenses and it is up to each municipal operator to determine its best use. Foothill Transit received \$7 million in Measure R funding for FY14. Roughly 70% or \$4.7 million will be used to back fill the current operating budget, 6% to be used for Transit Store staffing, store improvements, and NextBus Real Time operating costs, leaving about 27% or \$1.9 million in available funds for service expansion.

**Service Reductions**

In FY11, facing a projected \$12.5 million operating budget deficit, Foothill Transit undertook major service cuts, service reorganization and fare increases to balance the budget. A single, unproductive route was completely cut, many routes were truncated and over 170 trips were eliminated. Many of the trips were midday trips such as the six trips cut from Line 195 and the six trips cut from Line 285. The cuts were strategic enough that existing ridership did not suffer; in fact, there were nearly 20,000 more boardings in FY11 than FY10. However, the cuts left many lines with inconsistent service, making the system as a whole difficult to understand and use. Transfers are more difficult if frequencies are inconsistent and if local service in the middle of the day stops for three hours, mobility is severely impacted.

This report explores instances where adding trips that were previously cut will enhance the customer experience. Specific scenarios which address these cuts are the following:

- Line 185 – Add trips to standardize headway during off-peak times
- Line 195 – Add trips to restore service during off-peak times

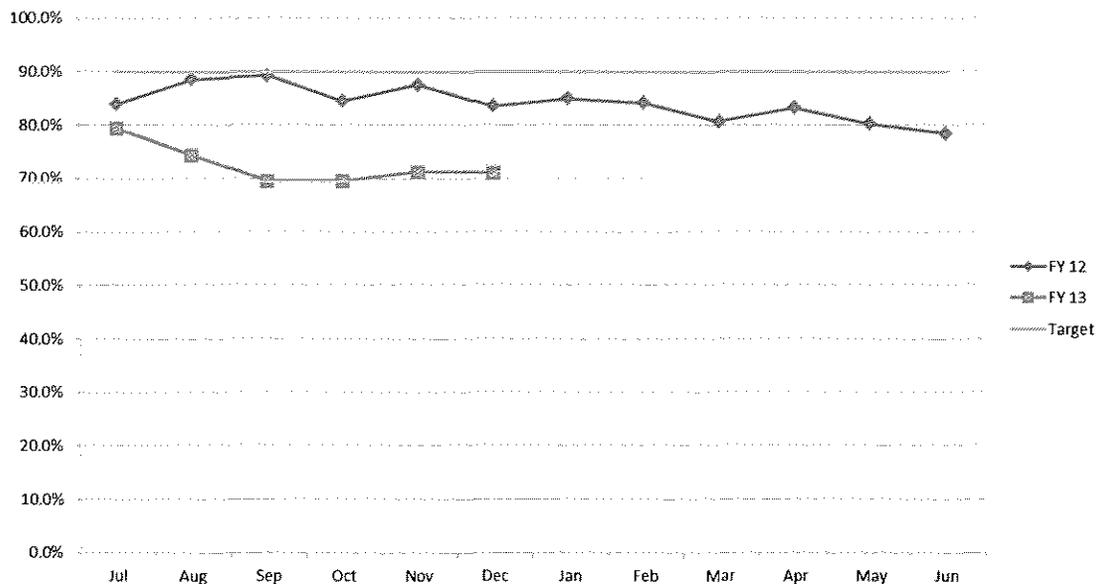


Many of the lines which experienced cuts were not analyzed for this round of schedule enhancements because of low boardings or acceptable on-time performance. Additional information on the methodology of how lines were selected for study is described in

**Section 2: Current Situation**

As of January 2013, Foothill Transit’s year-to-date on time schedule adherence percentage is 72.3 percent. This is a 16 percent decrease compared to reported FY12 data. It is important to note that FY13 marks the beginning of the use of electronically collected data for Foothill Transit on-time performance calculations. The on-time performance calculations are now taking into consideration many more timepoints; over 300,000 timepoints every month versus 2,000 when data was collected manually. Foothill Transit’s on-time performance goal is 90 percent system wide. Below is a table which depicts on time performance for FY 12 and FY 13 compared to the target on time performance:

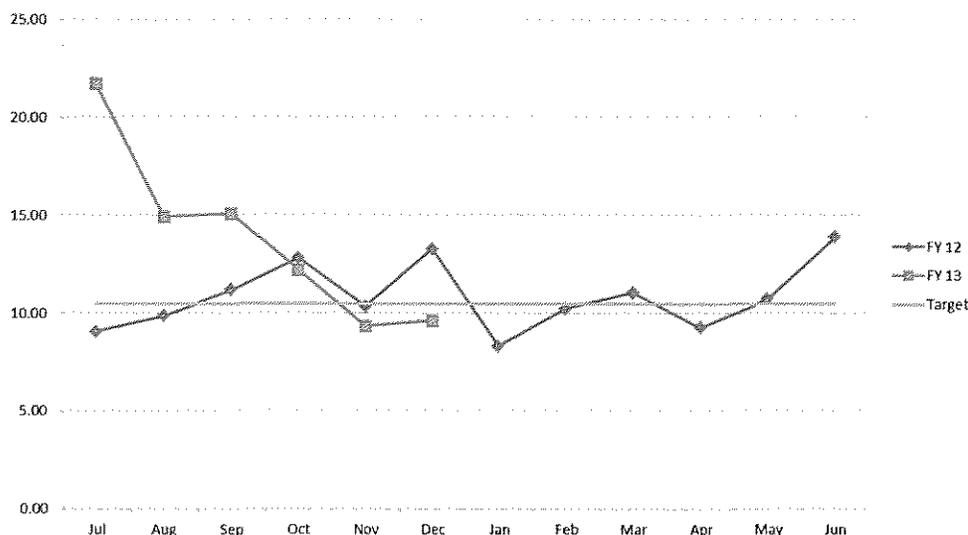
### Schedule Adherence



The number of customer complaints has also gone up; currently Foothill Transit’s year-to-date figure for complaints per 100,000 boardings is 12.64, almost 49 percent higher when compared to the same period last year. Out of the 949 total complaints received, 439 or 46 percent are related to schedule adherence. On the following page is a table which depicts customer complaints per 100,000 boardings for FY 12 and FY 13 compared to the target on-time performance:



## Complaints per 100,000 Boardings



Foothill Transit’s mission is to be the premier public transportation provider. The customer experience begins when customers decide to use Foothill Transit, and wait at the bus stop. Customers look at the schedule and assume the bus will arrive on time. The longer customers wait at a bus stop, the more likely they are to file a complaint. To help minimize the customers’ wait time, schedules had already begun to be adjusted to match current traffic patterns. Foothill Transit is also preparing to launch the NextBus real time passenger information system which will push real-time approximate bus arrival times to smartphones, digital bus stop signage, Foothill Transit’s website, and to our 800 customer service phone number.

### Section 3: Methodology

All Foothill Transit lines were studied to identify the top ten worst performing lines in the following categories: number of schedule adherence complaints, on-time performance (OTP), contribution to the overall on-time performance statistic (dictated by route frequency), and overall ridership. Charts of each category are provided in the Appendix. The lists were combined and a route was given one point every time it ranked in the top ten in each category. The routes with the most total points were selected for further study for possible enhancements. Express lines were not chosen for further study because they are limited service routes that operate only during AM and PM peak hours, some at ten-minute frequencies. Schedule adjustments to help with on-time performance are already planned for the upcoming May service change. The chart below shows the top ranking lines according to the criteria identified:



Route	Comments	Ridership	Contribution to OTP	% On Time
Route 480	4	8	7	10
Route 486	9	2	3	8
Route 187	6	1	1	
Route 281	7	10	10	
Route 492	8	6	4	
Route 707	1	3	2	
Route 178		4	9	
Route 280		5	8	
Route 482		7	5	
Route 488			6	5
Route 498	5			2
Route 499	2			6
Route 699	3			3
Route 185	10			
Route 289				9
Route 291		9		
Route 493				7
Route 497				1
Route 690				4

The lines that were chosen for further study are Lines 178, 185, 187, 280, 281, 480, 482, 486, 492 and 707 – Silver Streak. Each line is explored in detail, including proposed enhancements in **Section 4: Line-By-Line Analysis**.

**Methods for Improving Service**

1. Fill the gaps in local service.
  - a. In order for transit to be a viable option for customers there cannot be any gaps in service or periods in the day when there is absolutely no service. No buses on Line A not only means no passengers for Line A, but also less passengers on other lines, who otherwise would have received transfer passengers from Line A. Having gaps in service makes it difficult or impossible for Foothill Transit customers to go to work, make appointments, run errands, etc.
  
2. Extend operating hours
  - a. Once a basic schedule is set with consistent runtimes during the day, then the extension of operating times can be considered. This extension is



based upon whether there is ongoing or very frequent large amount of activity occurring beyond the current scheduled runtimes.

- b. Some examples include: Last run occurs at 5p.m., however offices do not close until after 6p.m.; College classes let out at 9p.m. but service ends at 8p.m.; Line X reaches Transfer Point A at 7:30p.m., but Line Y last serves the transfer point at 6p.m.; etc.
3. Increase frequency of trips
    - a. Some bus lines may merit an increased number of trips per hour due to heavy volumes of passengers. Increasing the number of trips will make for a more pleasant customer experience as buses are less crowded. Increasing the number of trips will also slightly improve the average speed of buses - the length of time that a bus has to stop and load people is reduced because another bus came not too long ago (thus fewer passengers to pick up and wait upon).
  4. Limited-Stop service
    - a. Lines which run very frequently can be further supplemented by introducing limited stop service. Buses that operate on a limited service run on the exact same route as the normal service but serve fewer stops; please see the following diagram that accompanies this description. Whereas normal service serves all Stops A – I, limited service would only serve Stops A, C, E, G, I. This means that overall trip time will be significantly reduced for the limited service, allowing passengers to reach their final destination faster.

Most often, those who live near a limited stop will walk a little further to access the faster, limited service rather than wait longer for the slower, normal service. Someone who lives by Stop B will walk to Stop A or C to utilize the limited service bus. Those who live along a segment where the limited service bus bypasses the stops, for example someone at Stop E, can still take the normal service when the next bus arrives. Moreover, limited service has a multiplier effect on the normal bus service: the limited service picks up several passengers at one consolidated location so that the next normal service bus has fewer passengers to pick up, resulting in less stops and shorter loading times for the normal service as well. In the diagram below, although the normal service serves all stops, residents at Stops B, D, F, H are apt to walk one next stop over to catch the limited service bus. Thus, when the next normal service bus comes it will not need to pull over at Stops B, D, F, H. Consequently, the person waiting at Stop F for the normal service has to wait a shorter period.



Normal service  
Limited stop \_\_\_\_\_

A B C D E F G H I

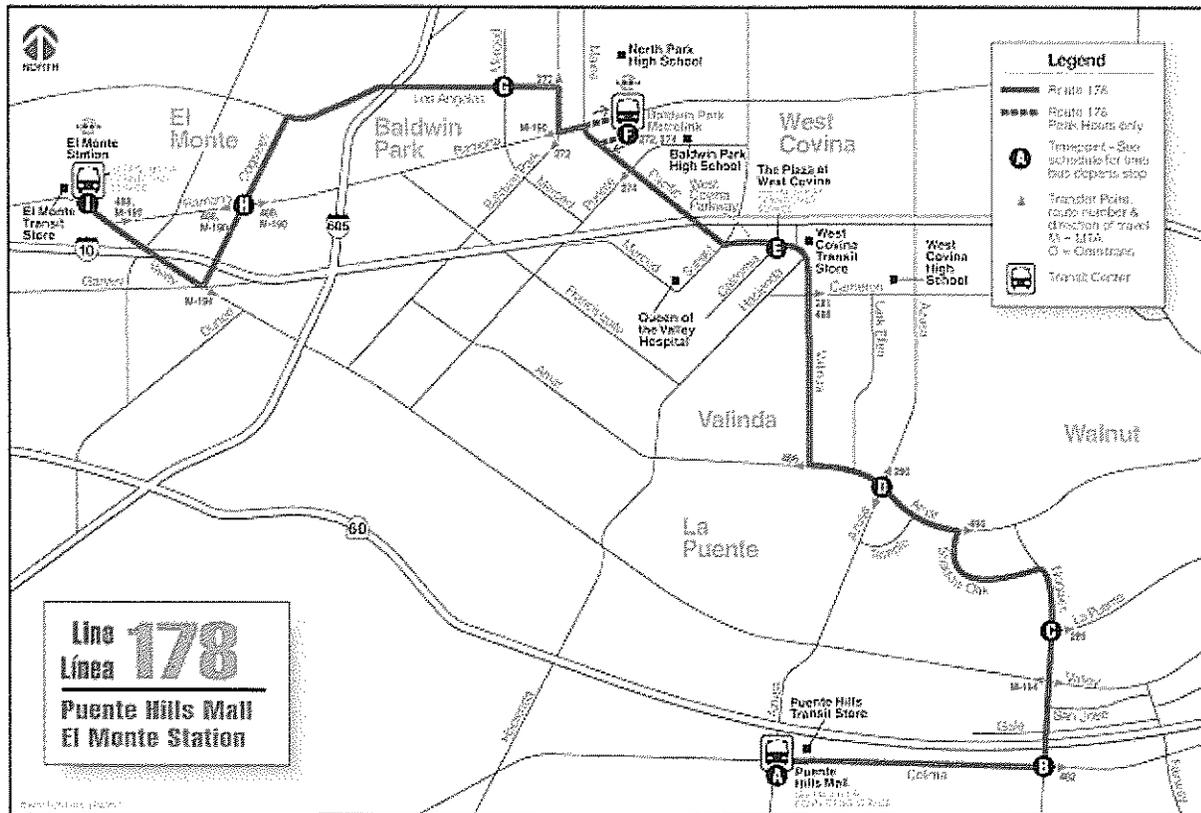
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Limited service stops are determined by a variety of factors including the number of boardings/alightings at a stop, transfer connections to other lines, and distance between other stops. The key for an efficient and effective limited service is the balance between having a minimum number of stops to serve key locations without having too many stops whereby gains in time saved is lost.

**Section 4: Line-By-Line Analysis**

This section outlines different service enhancements which were considered for each line. Each line was analyzed for potential service enhancement according to the four service enhancement scenarios which were outlined previously in this document. Most lines have a substantial, moderate and conservative proposal.

**Line 178**



Line 178 travels nearly 20 miles from Puente Hills Mall to El Monte Station, via West Covina Mall. Line 178 has the third most boardings in the system due to its connections with a multitude of other lines. Line 178 has connections with Lines 185, 272, 274, 280, 281, 282, 285, 289, 481, 482, 486, 488, 492, 493, 494, 280, and the Silver Streak. Line 178 is also the only line in the system which serves the Baldwin Park Metrolink station. In addition to its connections with other lines, Line 178 serves major employment nodes at both malls, as well as a variety of small business and retail centers along Colima Road in Hacienda Heights and Rowland heights. Line 178 runs from 5:00 a.m. to 8:30 p.m. on the weekdays and 6:05 a.m. to 7:10 p.m. on the weekends. There are 64 trips each weekday and 46 trips each weekend with 30 minute frequencies in the weekday and 30 minutes to 1 hour frequencies in the weekend. The three options available for Line 178 are:



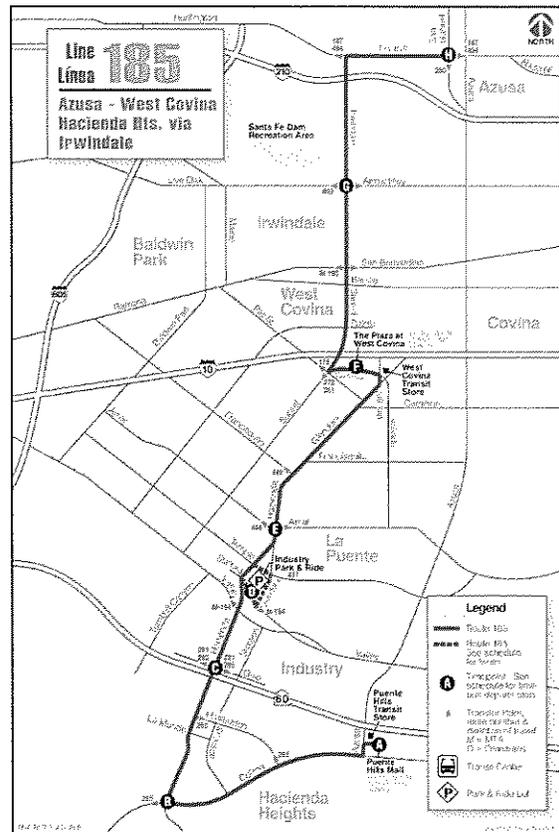
Option	Cost	Discussion
Substantial	\$725,694.30	<ul style="list-style-type: none"> <li>➤ Increase frequencies from 30 minutes to 20 minutes on the weekday, from 6:00 a.m. to 5:00 p.m.</li> <li>➤ Extend night service additional hour to coincide with mall closing hours, on both weekday and weekend.</li> </ul> <p>As the line with the third most boardings, and the second most patronized local line, Line 178 is a vital component of passengers' everyday lives, enabling people to complete daily activities and random chores or appointments outside the house. Increasing frequencies would mean easier transfers to the 17 other lines that Line 178 connects to, and lead to improved mobility overall for people. This option also extends service by an additional hour at night on the weekday and weekend, so that mall employees (as well as shoppers) have a way of returning home when the mall closes.</p>
Moderate	\$406,396.61	<ul style="list-style-type: none"> <li>➤ Increase frequencies from 30 minutes to 20 minutes on the weekday, from 10:00 a.m. to 4:00 p.m.</li> <li>➤ Extend night service additional hour to coincide with mall closing hours, on weekdays.</li> </ul> <p>This option follows the same strategy as the Substantial option. The only difference is that increased frequencies are only implemented from 10:00 a.m. to 4:00 p.m.; these hours average the highest boardings of the day. Consequently, the cost is less with slightly fewer increased trips.</p>
Conservative	\$361,540.95	<ul style="list-style-type: none"> <li>➤ Increase frequencies from 30 minutes to 20 minutes on the weekday, from 6:00 a.m. to 7:00 a.m. and 4:00 p.m. to 5:00 p.m.</li> </ul> <p>The conservative option only increases frequencies during the peak of the rush hour. Although these times do not average the highest boardings, increasing trip frequencies during this time will allow people to get to work faster and go home faster.</p>

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Proposed Service Enhancements

Line 185

Line 185 travels 16 miles between Azusa and Puente Hills Mall in the City of Industry. The route serves The Plaza at West Covina, and the Industry Park and Ride during the week. Passengers can transfer along the line to Foothill lines 187, 494, 280, 492, 178, 272, 281, 488, 486, 282, 285, 497 and Metro lines 190 and 194. The line runs between 5:15 a.m. and 8:55 p.m. during the week, and has 55 weekday trips and 47 weekend trips. It travels at 30 minute to one hour headways. So far in FY13, the line has had 259,456 boardings, 81 percent of which are weekday boardings (12<sup>th</sup> in total boardings).

For FY13, the on time performance for the line has been 71.43 percent. It has received 41 complaints of 993, or 4 percent. The three options to improve customer service on this line are:

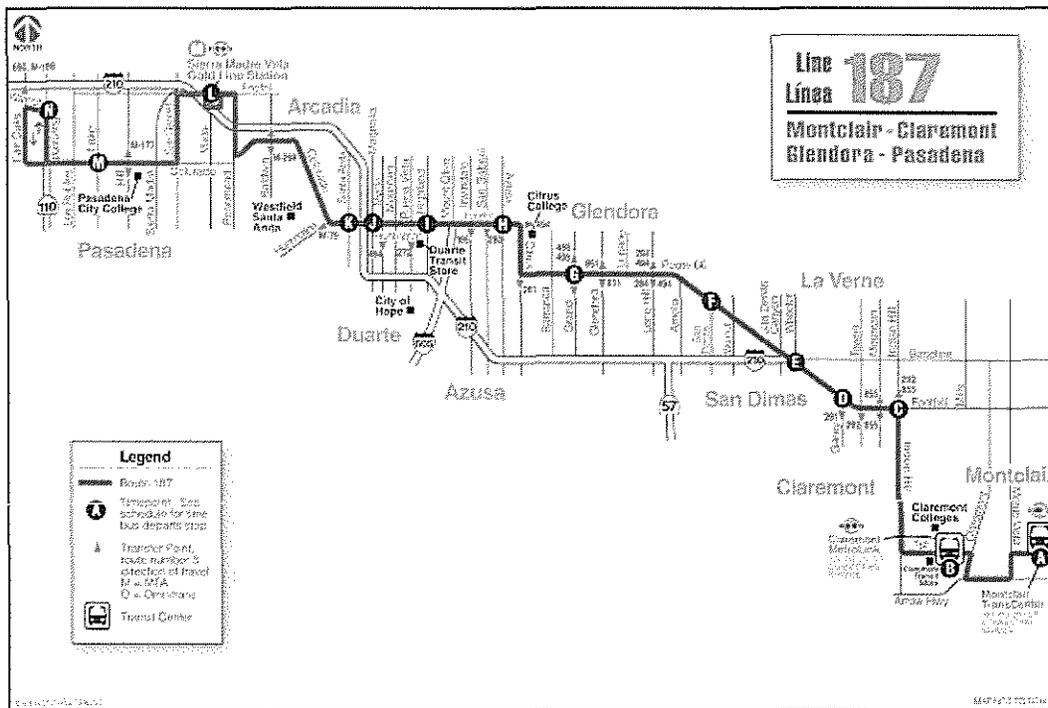


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Option	Cost	Discussion
Substantial	\$205,917.79	<ul style="list-style-type: none"> <li>➢ Add 6 trips to standardize headway to 30 minutes between 9:50 and 12:45 on weekdays</li> <li>➢ Extend night service an additional hour to match mall hours on weekdays (2 additional trips)</li> <li>➢ Extend night service on the weekends to match mall hours (5 additional trips)</li> </ul> <p>Increasing frequencies allows easier transfers and improved mobility overall. The schedule is more reliable as customers know there will be a bus every 30 minutes during the weekday. This option also extends service by an additional hour at night on the weekday and weekend, so that customers have a way of returning home when the mall closes.</p>
Moderate	\$126,724.56	<ul style="list-style-type: none"> <li>➢ Add 6 trips to standardize headway to 30 minutes between 9:50 and 12:45 on weekdays</li> <li>➢ Extend night service an additional hour to match mall hours on weekdays (2 additional trips)</li> </ul>

		This option is the same as the Substantial version, except that it does not extend weekend service to match mall hours.
Conservative	\$31,681.14	➤ Extend night service an additional hour to match mall hours on weekdays (2 additional trips)

Line 187



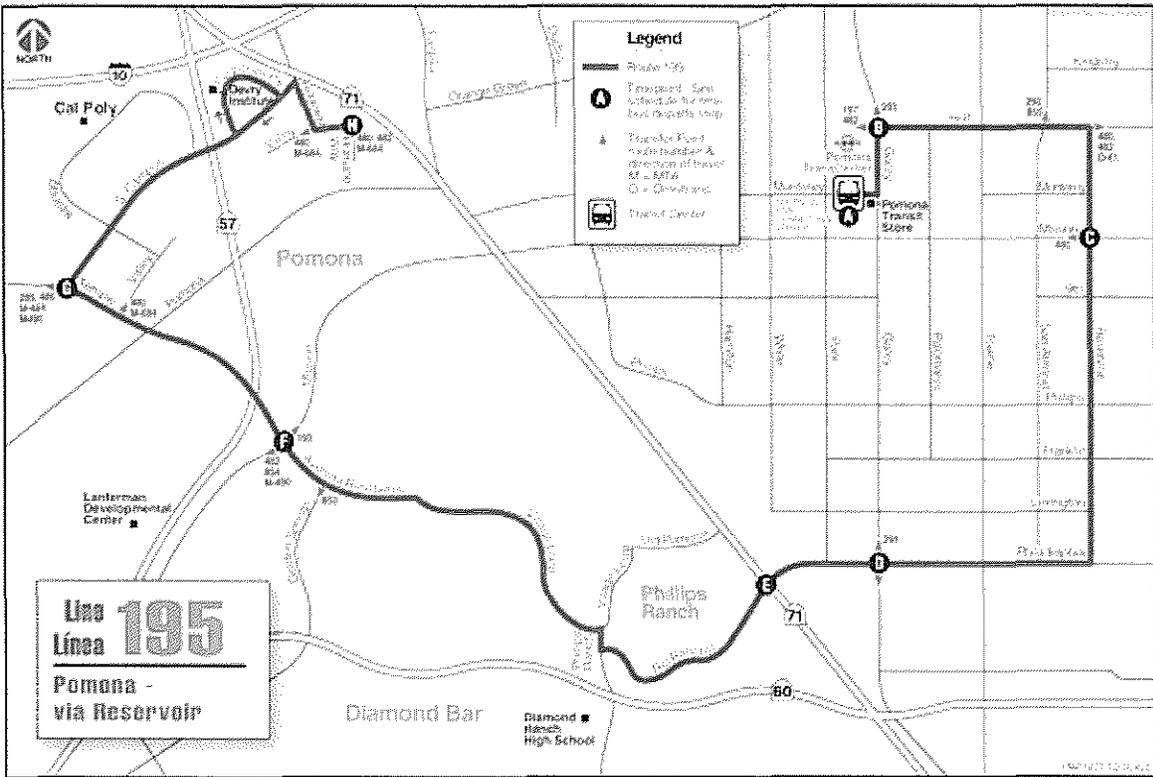
Line 187 is Foothill Transit's most heavily traveled line. It runs 30 miles from Montclair to Old Town Pasadena, traversing Claremont, San Dimas, Glendora, Duarte, Monrovia and Arcadia. Most of the route travels along Route 66/Foothill Boulevard. It services the Claremont Village and Claremont Colleges, Citrus College, Santa Anita Mall and Santa Anita Racetrack, Sierra Madre Villa Gold Line Station, Pasadena City College and Old Town Pasadena. Passengers can transfer to Foothill lines 292, 855, 291, 494, 284, 851, 498, 488, 281, 280, 185, 272, 494 and 690 as well as Metro lines 188, 177, 268, 79 and the Metro Gold Line. It has 110 weekday trips and 69 weekend trips, and has had 410,657 boardings in FY13. 79 percent of these boardings are weekday boardings. The line has 20 minute weekday headways and 30 minute weekend headways.

For FY13, on-time performance for the line is 75.03 percent, and is the major contributor to overall OTP (11 percent). It is the second largest comment generator with 138

complaints of 993 total complaints (14 percent). To address the general issue of customer satisfaction, we propose a limited stop version of the local line to get riders to their destinations faster. The adjustment would be revenue neutral, except for the added cost of promoting the new service, and branding the stops serviced by the limited line. This line is well suited for a limited stop variant because of the heavy boardings it receives and the long distance it travels. Other agencies which have implemented skip stop service have reported time savings between 15 percent and 23 percent, and some have even reported ridership gains.

The proposed variant would service about 34 percent of the stops on the local line, moving passengers to their destination faster. Stops were selected by ridership levels, however, distance between stops was also considered.

Line 195



Line 195 travels in the City of Pomona between the Pomona Transit Center and the intersection of Ridgeway Street and Valley Boulevard via Phillips Ranch. The line is 11 miles long, and services Cal Poly Pomona and Devry University. Passengers can transfer to Foothill Transit Lines 482, 197, 291, 292, 855, 480, 286, 482, 854, 289, 486, Metro lines 190 and 194 and Omnitrans Line 61. The line runs between 5:35 a.m. and 6:45 p.m. and has 22 weekday trips and 20 weekend trips. The headway is one hour,



and there is no service between 10 a.m. and 1 p.m. a result of cuts during FY10. FY13 has seen 49,000 boardings, 82 percent of which are weekday boardings (26<sup>th</sup> in total boardings).

For FY13, on-time performance is 77.19 percent. The two options to improve customer service on this line are:

Option	Cost	Discussion
Substantial	\$131,544.30	➤ Add 12 trips during the week and weekend between the hours of 10 a.m. to 1 p.m.  This enhancement would fill the gap created by service cuts in FY10 standardizing the headway making the line more reliable and increasing mobility.
Conservative	\$65,722.15	➤ Add 6 trips during the week between the hours of 10 a.m. to 1 p.m.  This enhancement would fill the gap created by service cuts in FY10 standardizing the headway making the line more reliable and increasing mobility.

**Line 280**

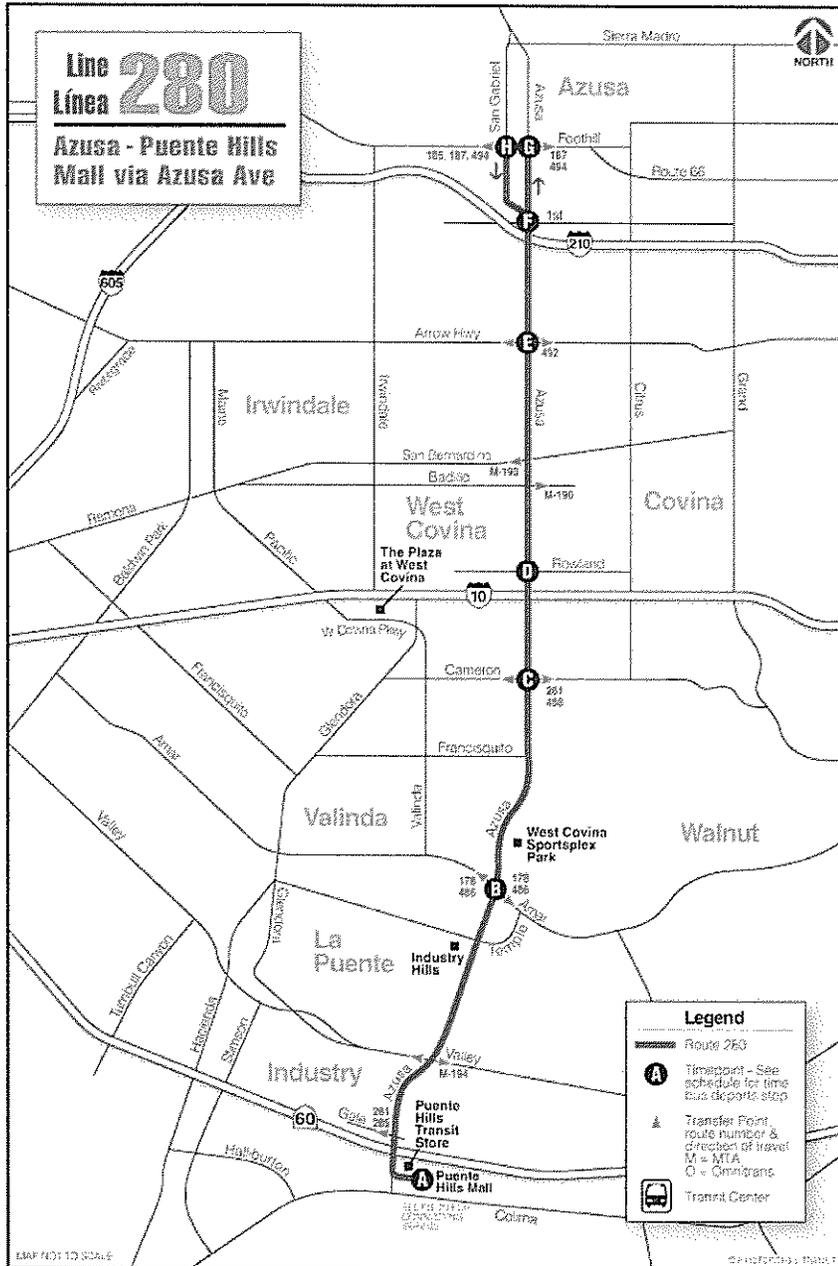
Line 280 travels 10.3 miles between Azusa and Puente Hills Mall in the City of Industry via Azusa Avenue. It services a number of popular shopping destinations, and terminates in Azusa not too far from Azusa Pacific University. Passengers can transfer to Foothill Transit Lines 281, 285, 178, 486, 488, 187, 494 and 185 and Metro Lines 190 and 194. Line 280 is the 5<sup>th</sup> most traveled line and has 103 weekday trips and 62 weekend trips with 410,521 boardings in FY13. Eighty percent of the boardings are weekday boardings. The line has 20 minute weekday headways and 30 minute weekend headways.

For FY13, on-time performance for the line is 77.88 percent, and is the 9<sup>th</sup> contributor to overall OTP (3.97 percent). It is the tenth largest comment generator with 42 complaints of 993 total complaints (4 percent).



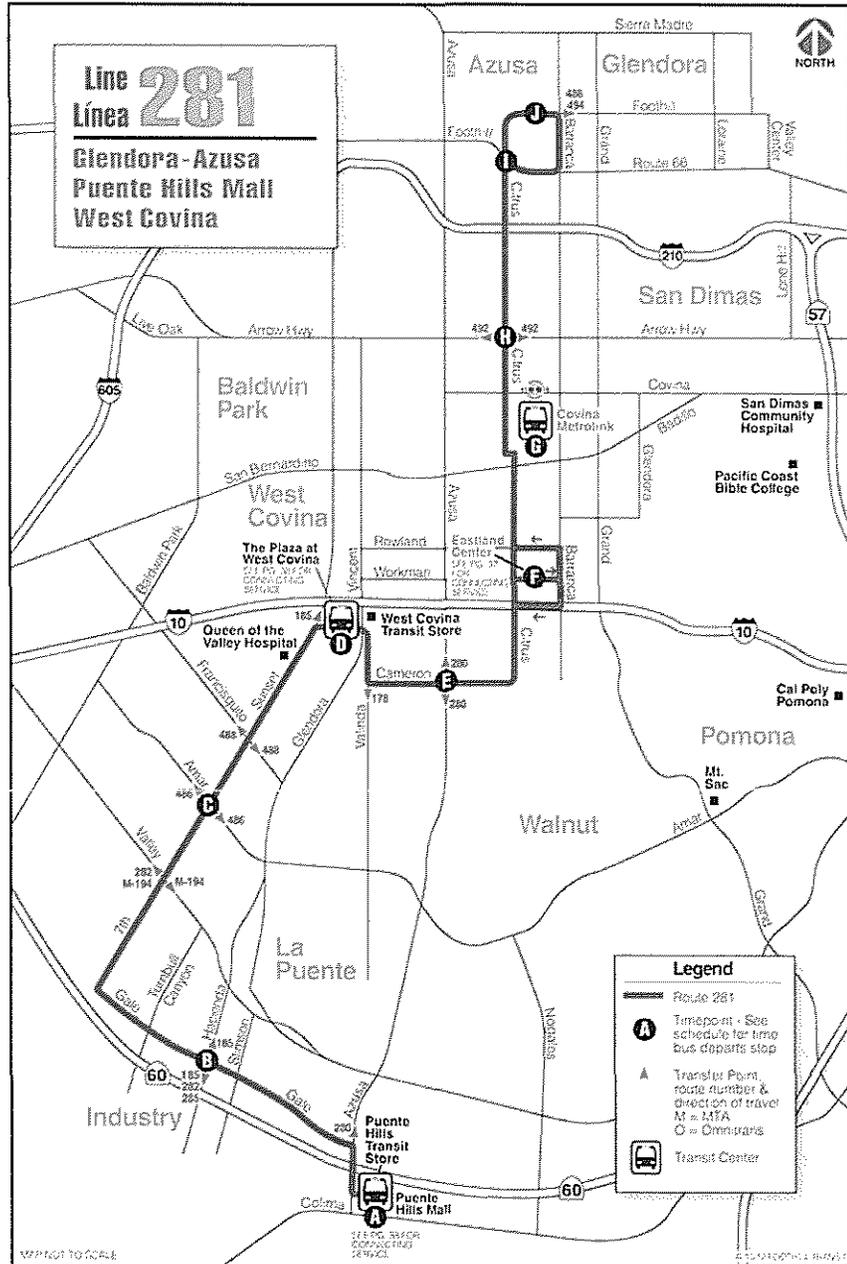
At this point it is not recommended to make any changes to this line, as it already runs

on a fairly frequent headway. It could be a candidate for limited stops further down the line, depending on the success of the other proposed limited stop lines.



Line 281

Line 281 travels 18 miles between Citrus College and Puente Hills Mall in City of Industry. The route runs via Citrus Avenue, Sunset Avenue and Gale Avenue for most of the route. It services Citrus College, the Covina Metrolink stop, Eastland Center, The Plaza at West Covina and the Queen of the Valley Hospital. Passengers can transfer to Foothill Transit Lines 492, 488, 494, 280, 178, 185, 488, 486, 282, 185, 285, 280 and Metro line 194. The line has 63 weekday trips and 26 weekend trips, and travels at 30 minute headways during the week and hour headways during the weekend. This line has had 263,801 boardings in FY13, 86 percent of which are weekday boardings (10<sup>th</sup> in boardings).



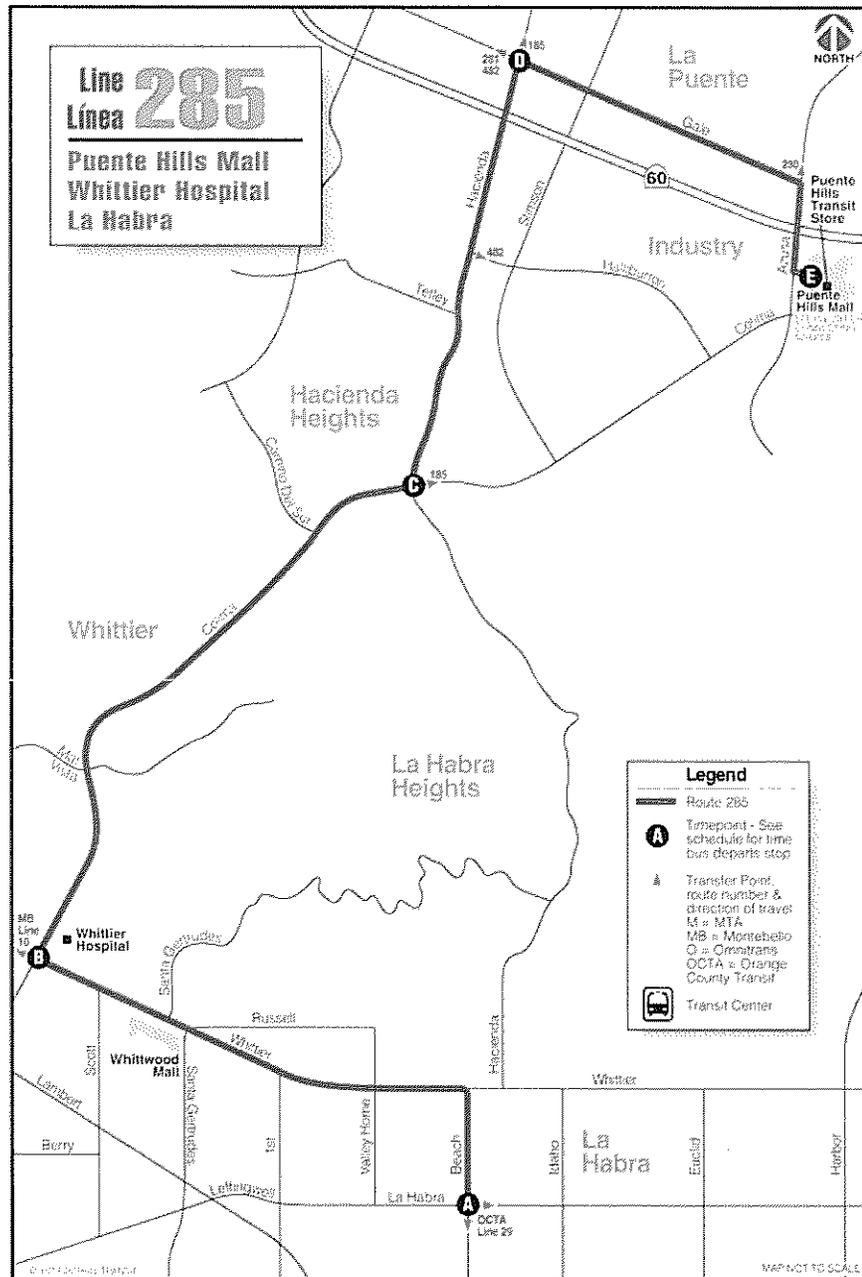
For FY 13, the on time performance was 75.34 percent. It was the 7<sup>th</sup> largest generator of comments garnering 62 complaints, or 6 percent of all complaints. The line has ridership to support decreasing the headway to 20 minutes.



Option	Cost	Discussion
Substantial	\$456,237.08	<p>➤ Increase frequency to 20 minutes between 6 a.m. and 6 p.m.</p> <p>Increasing bus frequencies all day can do the dual service of helping relieve heavy loads during busy periods and make the service more reliable to customers. This may also make the service more attractive to potential riders, and well as keep our current customers satisfied. Increasing frequencies should reduce wait time for customers and could perhaps lead to quicker trip times if the bus has to stop less or take less time to load customers since customers will be distributed more evenly among trips.</p>
Moderate	\$342,177.81	<p>➤ Increase frequency to 20 minutes between 6 a.m. and 7 a.m. and 9 a.m. and 4 p.m.</p> <p>This approach increases headways during the busiest travel periods for the line. This scenario has the same benefits the Substantial approach. The only drawback to this approach is having inconsistent headways through the day which makes it a little harder for a customer to predict when their bus will arrive, and thus makes the service seem, perhaps, slightly less reliable.</p>
Conservative	\$190,098.78	<p>➤ Increase frequency to 20 minutes between 6 a.m. and 10 a.m. and 2 p.m. and 5 p.m.</p> <p>This approach increases headways during the typical commuting times, which aren't necessarily the heaviest travel times for the line. However, increasing the trip frequency during this time period will help customers get to and from work a little faster by reducing their wait times.</p>

**Line 285**

Line 285 is approximately 11 miles in length and runs between the city of La Habra and Puente Hills Mall. This line serves major businesses along Whittier Boulevard in the City of Whittier and Gale Avenue in the City of Industry. It is only one of two transit lines that traverse the Puente Hills and is a vital link transporting people from homes in Orange County to jobs in Los Angeles County, and vice versa. Line 285 runs on an hourly basis from 5:45 a.m. to 7:45 p.m. on the weekdays, however there is no service at all from 9:45 a.m. to 12:45 p.m. On the weekends, service runs from 7:10 a.m. to 8:10 p.m. on an hourly basis. Passengers taking Line 285 into Puente Hills Mall are able to connect to Lines 178, 185, 280, 281, 282, 285, 289, 482, 493.





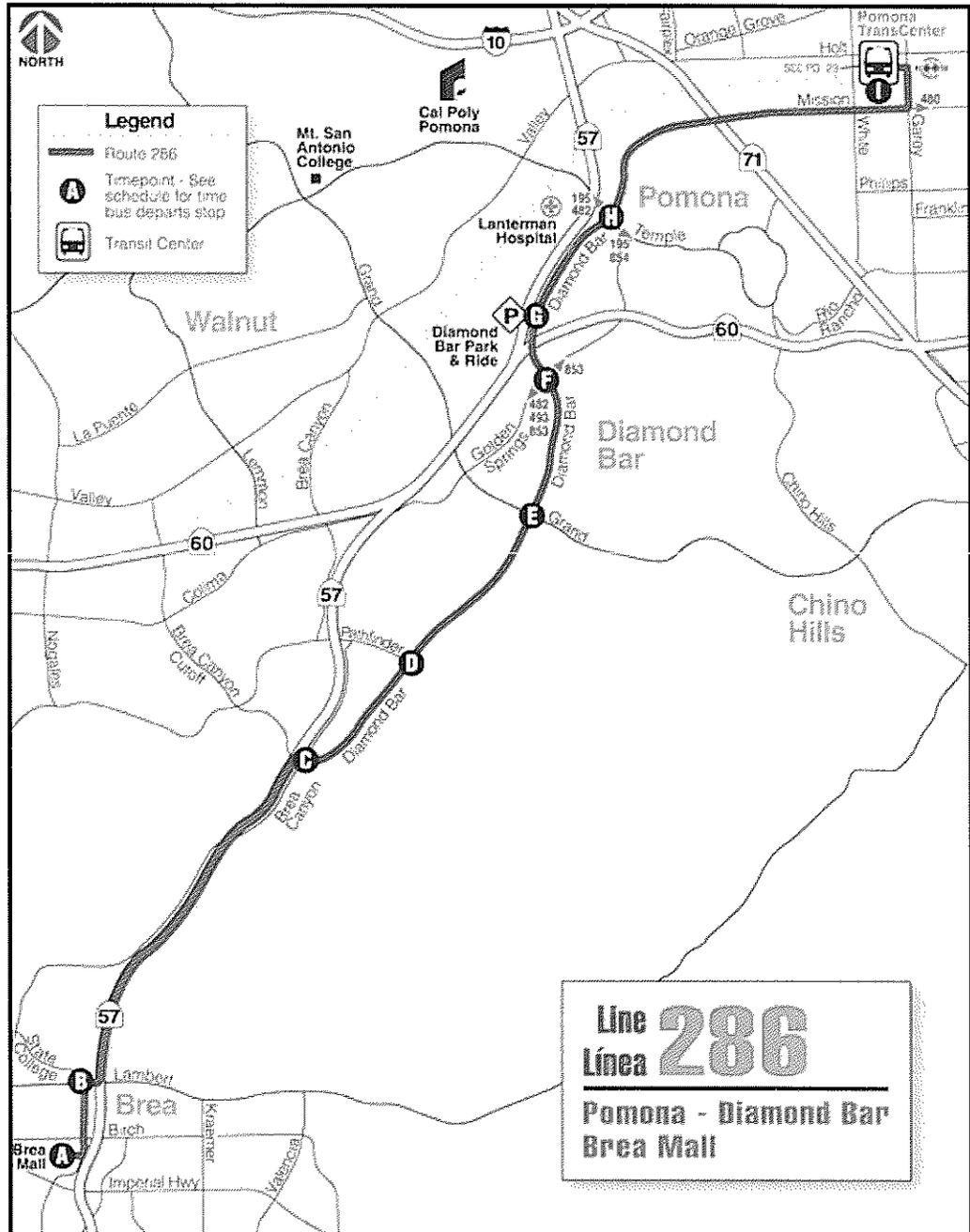
Option	Cost	Discussion
Substantial	\$231,936.11	<ul style="list-style-type: none"> <li>➤ Fill gaps in mid-day service between 9:45 a.m. and 12:45 p.m.</li> <li>➤ Extend service times two hours on both weekdays and weekends.</li> </ul> <p>In order for transit to be productive, customers must view it as a practical option. People are usually never willing to wait more than an hour to take a bus, and when there are no buses for three hours transit is not considered at all. Thus, this option would fill the three hour gap in service so that buses run on an hourly basis. As an example, a person might live in Hacienda Heights and work an afternoon shift in Whittier. He can take Line 285 to get home in the afternoon but there is no bus in the morning that takes him to work, so this person does consider our service an option because it only fulfills half his needs. The solution proposed in this option would make transit a viable alternative as Foothill Transit would provide both an outbound and inbound (to and from) trip. Service times would also be extended in this scenario for the same reasons. People can take the bus into work at Puente Hills Mall however because our service currently ends before the mall closes these people would be stranded at work with no way of getting home. As a result, these people won't take the bus at all. Extending service hours means that people having a means of getting to and from work and not just to work only.</p>
Moderate	\$107,601.41	<ul style="list-style-type: none"> <li>➤ Fill gaps in mid-day service between 9:45 a.m. and 12:45 p.m.</li> <li>➤ Extend service times two hours on weekdays</li> </ul> <p>This option is the same as the Substantial option except that service times would only be extended on the weekdays.</p>
Conservative	\$53,800.71	<ul style="list-style-type: none"> <li>➤ Fill gaps in mid-day service between 9:45 a.m. and 12:45 p.m.</li> </ul> <p>The minimal level of service required for this line to be productive is for trips to operate on an hourly basis throughout the day.</p>



Line 286

Line 286 runs approximately 16 miles from Brea Mall to Pomona TransCenter. As with Line 285, this line is one of only two transit lines that traverse the Puente Hills and is the only link transporting people from homes in eastern Los Angeles County to jobs in Orange County, and vice versa. Service runs from 6:00 a.m. to 7:05 p.m. on the weekdays and 7:30 a.m. to 7:35 p.m. on the weekends. Line 286 provides connections

to Lines 195, 197, 286, 291, 292, 480, 482, 493, 853, 854, 855, and the Silver Streak. Many passengers along this route use this line to connect to Pomona TransCenter as well as to Brea Mall, which is a terminal for OCTA buses.



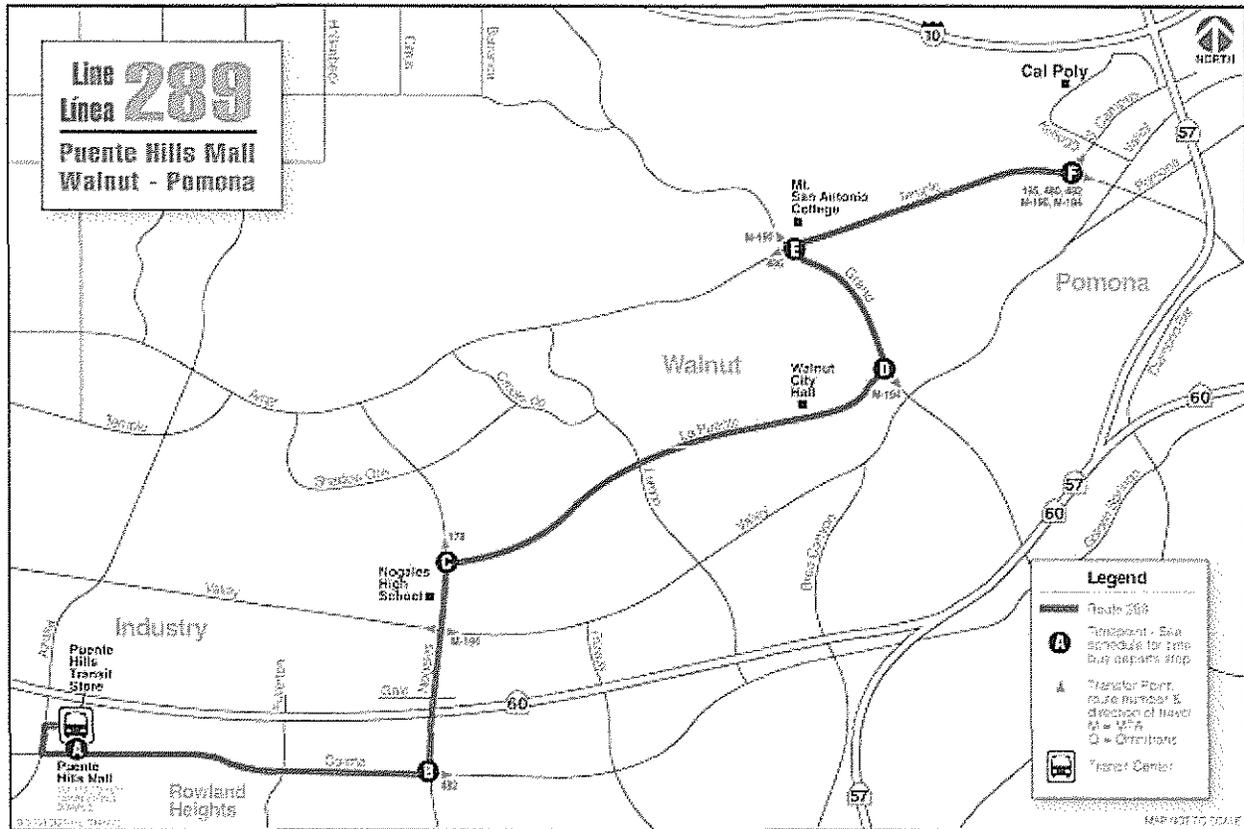


Option	Cost	Discussion
Moderate	\$80,654.65	<p>➤ Extend operating hours to coincide with 1) service times of buses operating out of Pomona TransCenter and, 2) closing of Brea Mall.</p> <p>Currently, Line 286 stops operating at an extremely early time. Many customers use this line to get to Brea Mall, and then transfer to an OCTA bus for the final two miles of their trip into Cal State Fullerton. In order to facilitate transfers to and from other lines, service would be extended later into the evening. There are no other options proposed for this route.</p>



Line 289

Line 289 runs approximately 11 miles from Puente Hills Mall to Cal Poly Pomona. Service runs on an hourly basis from 6:15 a.m. to 6:15 p.m. on the weekdays. On the weekends, service runs from 6:20 a.m. to 6:20 p.m. every other hour in the westbound direction and 7:05 a.m. to 5:05 p.m. in the eastbound direction. Line 289 is one of the two lines from the west and south that serves Mt. San Antonio College and Cal Poly Pomona. It is the only line from Puente Hills Mall with direct service to these two colleges. Line 289 has also connections with Lines 178, 185, 195, 280, 281, 282, 480, 482, 493.



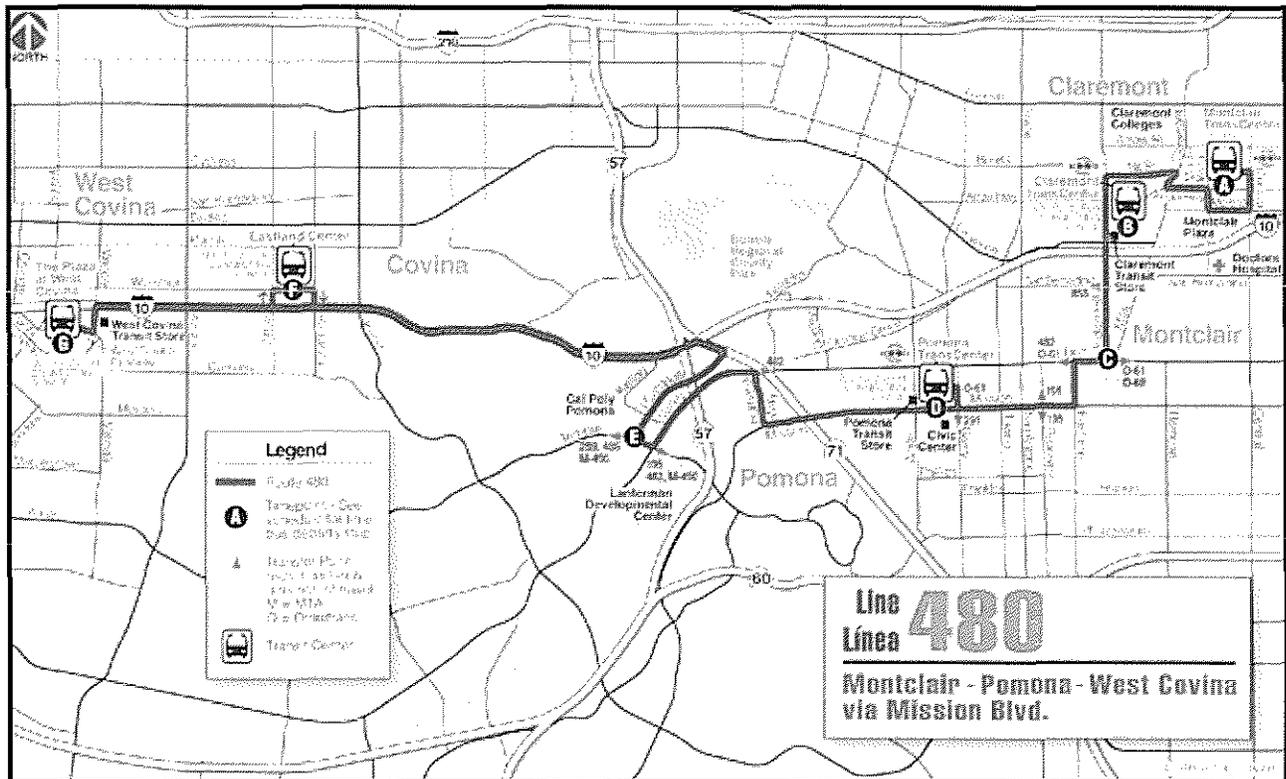


Option	Cost	Discussion
Moderate	\$353,267.32	<ul style="list-style-type: none"> <li>➤ Extend operating hours on weekday evenings</li> <li>➤ Fill gaps in service and increase weekend frequencies to an hourly basis</li> </ul> <p>A 6:00 a.m. to 6:00 p.m. span of service is typically the minimum needed operating run time for a local line. Local lines serve peoples' daily needs and most activities usually occur within this time range. However, on weekends most shopping and other activities take place well beyond this time frame. Furthermore, most people are not willing to wait two hours to take a bus. This option would increase frequencies to an hourly basis on the weekends so that transit becomes a practical option. In addition, weekday classes at Mt. San Antonio College and Cal Poly Pomona do not get out until after 10:00 p.m. Currently, the last 289 bus leaves before the last class evening class even begins. With Foothill Transit initiating a ridership program with Mt. San Antonio College, it behooves the agency to provide service which will the meet the needs of the program's targeted audience. This option would extend operating hours on weekday evenings to ensure that students have a means of utilizing Foothill Transit buses as their primary mode of choice to school, which will lead to a successful ridership program.</p>
Conservative	\$98,330.51	<ul style="list-style-type: none"> <li>➤ Extend operating hours on weekday evenings</li> </ul> <p>This option would extend operating hours on weekday evenings to ensure that the ridership program at Mt. San Antonio College can be successful in generating increased ridership. Weekend service would remain the same.</p>

Line 480

Line 480 travels 24.8 miles between Montclair and West Covina through Claremont, Pomona and Covina. It services a number of destinations including Claremont Village, Pomona TransCenter, Cal Poly Pomona, Via Verde Park and Ride, Eastland Center and The Plaza at West Covina. Passengers can transfer to Foothill Transit lines 855, 195, 291, 482, 195, 482, 289, 486 and 280, Omnitrans Line 61 and Metro Line 190. The line has 66 weekday trips and 57 weekend trips, and currently operates on a 30 minute headway. For FY13, this line has had 352,074 boardings, 81 percent of which are weekday boardings (8<sup>th</sup> in boardings).

FY13 on time performance for the line is 66.79 percent, and is the 7<sup>th</sup> contributor to OTP (4.3 percent). It is the 6<sup>th</sup> largest comment generator with 71 complaints of 993 total complaints (7 percent). The line has ridership to support decreasing the headway to 20 minutes.



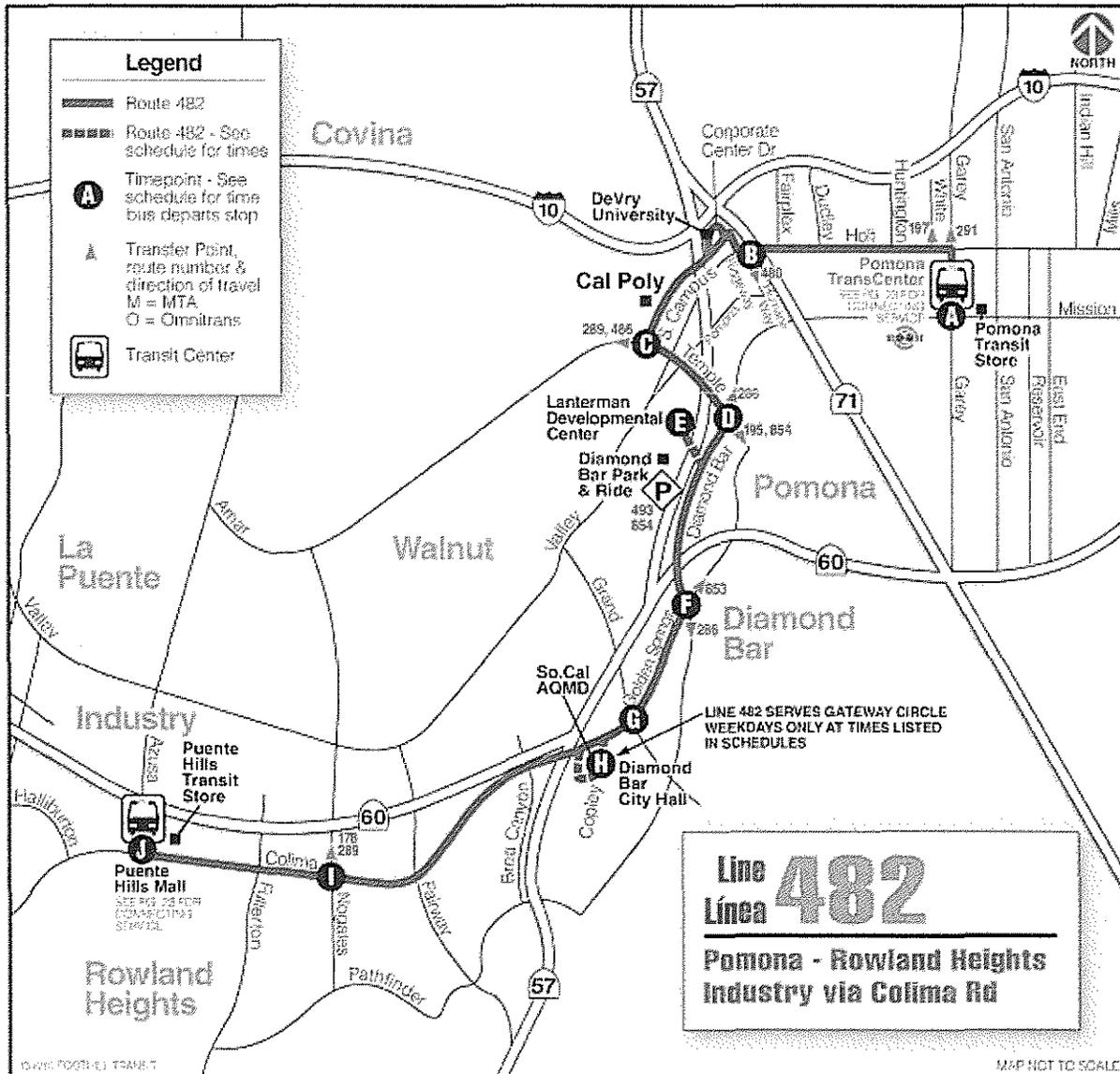


Option	Cost	Discussion
Substantial	\$678,532.51	<p>➤ Increase frequency to 20 minutes between 6 a.m. and 6 p.m. during the week</p> <p>Increasing bus frequencies all day can do the dual service of helping relieve heavy loads during busy periods and make the service more reliable to customers. This may also make the service more attractive to potential riders, and well as keep our current customers satisfied. Increasing frequencies should reduce wait time for customers and could perhaps lead to quicker trip times if the bus has to stop less or takes less time to load customers since customers will be distributed more evenly among trips.</p>
Moderate	\$371,969.47	<p>➤ Increase frequency to 20 minutes between 7 a.m. and 9 a.m. and 3 p.m. and 5 p.m.; Increase frequency to 30 minutes between 9:30 a.m. and 1:30 p.m.</p> <p>This approach increases headways during the busiest travel periods for the line. This scenario has the same benefits the Substantial approach. The only drawback to this approach is having inconsistent headways through the day which makes it a little harder for a customer to predict when their bus will arrive, and thus makes the service seem, perhaps, slightly less reliable.</p>
Conservative	\$262,768.32	<p>➤ Increase frequency to 20 minutes between 6 a.m. and 10 a.m. and 2 p.m. and 5 p.m.</p> <p>This approach increases headways during the typical commuting times, which aren't necessarily the heaviest travel times for the line. However, increasing the trip frequency during this time period will help customers get to and from work a little faster by reducing their wait times.</p>



Line 482

Line 482 runs approximately 18 miles from Puente Hills Mall to Pomona TransCenter. Major destinations are government offices in Diamond Bar, commercial offices at the intersection of Interstate 10 and State Routes 57 and 71, the Lanterman Developmental Center and Cal Poly Pomona. Line 482 is the 6th most boarded local line. Line 482 connects with Lines 178, 185, 195, 197, 280, 281, 282, 285, 286, 289, 292, 286, 291, 480, 482, 493, 853, 855, and the Silver Streak. Service runs from 4:00 a.m. to 11:46 p.m. on the weekdays and 6:05 a.m. to 11:30 p.m. on the weekdays, both every half-hour.



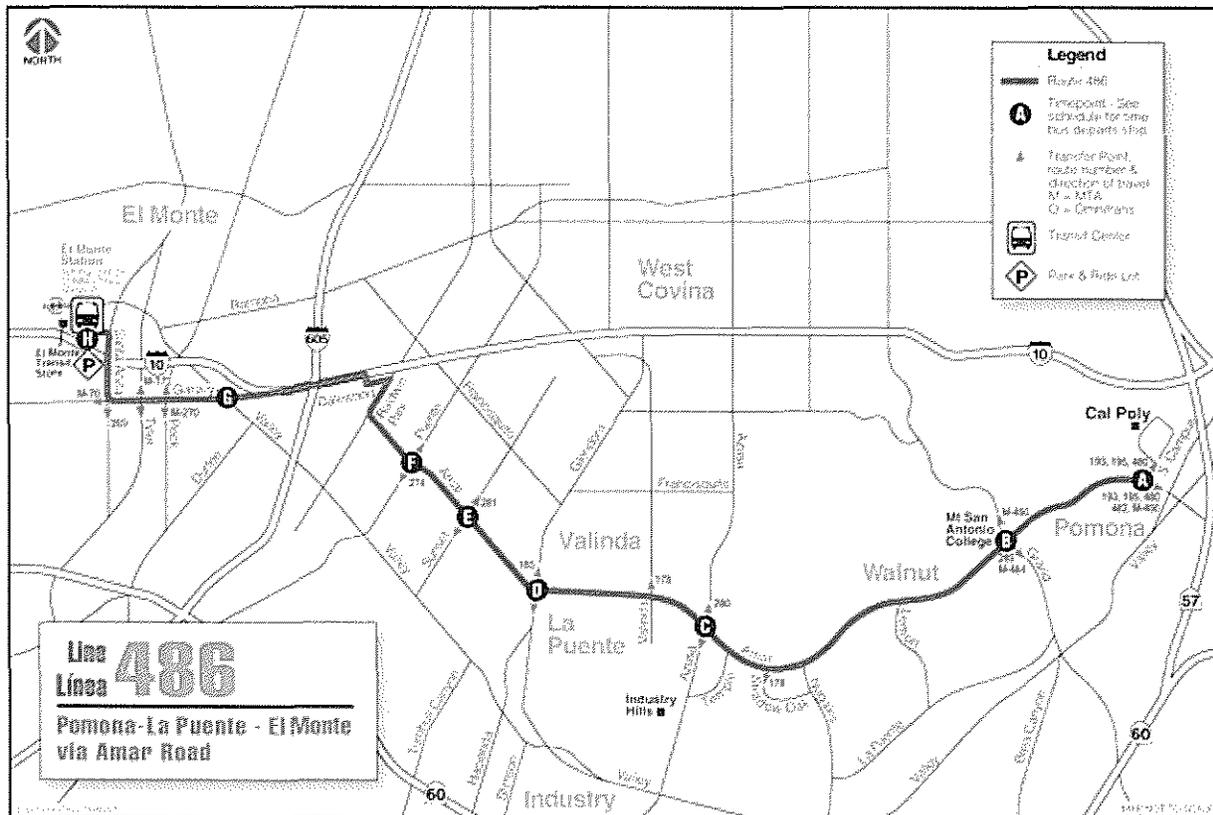


Option	Cost	Discussion
Moderate	\$40,113.94	<ul style="list-style-type: none"><li>➤ Additional stop serving Industry Metrolink station on the weekdays</li><li>➤ Additional trip serving Industry Metrolink station on the weekdays</li></ul> <p>Foothill Transit does not currently serve the Industry Metrolink station; the only way of arriving at the train station is by automobile. Adding this stop means that people can now take the bus to the train station instead of driving to it. Moreover, Foothill Transit will be opening its first Park &amp; Ride structure on this site in autumn 2013. Therefore, this option proposes to have currently operating trips make a service call at the Industry Metrolink site, with 1 additional morning trip put into service to match the first departing train of the day.</p>
Conservative	\$22,677.12	<ul style="list-style-type: none"><li>➤ Additional stop serving Industry Metrolink station on the weekdays</li></ul> <p>The conservative option would continue to have existing trips service Industry Metrolink however no new trips would be put into service.</p>

Line 486

Line 486 runs approximately 16 miles in length from El Monte Station to Cal Poly Pomona. Line 486 runs from 5:05 a.m. to 12:25 p.m and has connections to Lines 178, 185, 269, 281, 282, 289, 481, 488, 492, 494, and the Silver Streak. Line 486 is one of the few lines in the system network which runs in a linear fashion. Due to this relatively straightforward design and 15 minute frequencies throughout the day, Line 486 expedites passengers to different destinations and facilitates streamlined transferring. As a result, Line 486 has the second most boardings of all local lines. Line 486 also regularly has the worst on-time performance record – second worst out of all local lines.

Line 486 actually has very few major destinations en route – El Monte Station, Mt. San Antonio College and Cal Poly Pomona on the extreme ends of the route are the only major landmarks of note. However, because Line 486 crosses the heart of the service area in a relatively straight, east-west manner it also intersects with a multitude of other lines. It is passengers from these lines which feed into Line 486, on their way to either of the three previously mentioned destinations, which also build up the bulk of the passenger load. As there are only three major destinations on the route and most

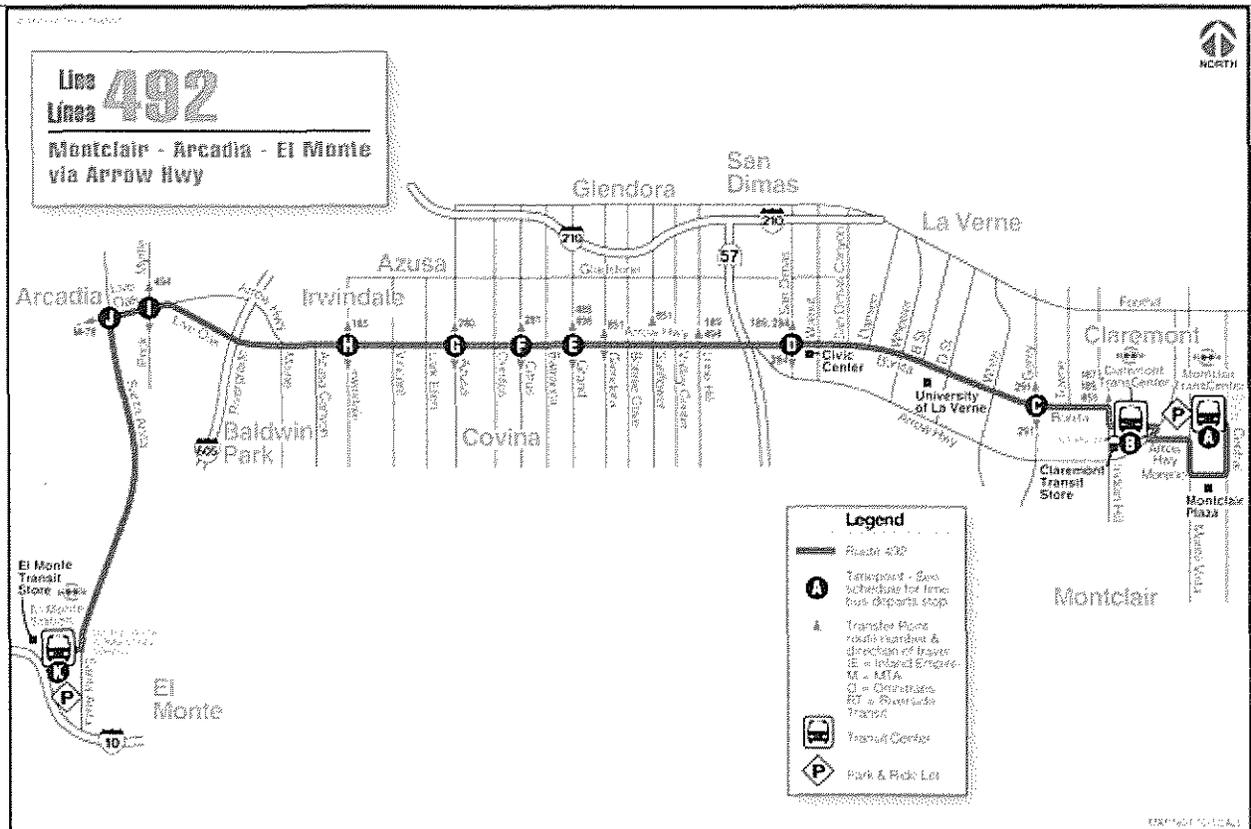


passengers are going to the same place, it is very unnecessary to make multiple stops for the few people along the way who are not going to the same destination. When this scenario is multiplied by the more than 125 trips per weekday, schedule adherence suffers needlessly. The recommended solution to improve on-time performance is by implementing limited stop service.

Limited stop service is the perfect solution for this situation as the majority of riders are coming and going from the same points. Buses that run a limited service are able to reach their destination faster because there are fewer stops that the bus has to make. Since Line 486 runs exclusively on its own route and its intersections with other lines is always at a point (never overlapping), it is easy to determine the locations with high boardings. It is these locations that will receive limited stop service. Line 486 currently has 48 stops, and the proposal is for added limited service to serve only 19 stops.

**Line 492**

Line 492 travels nearly 25 miles between Montclair and El Monte Transit Center via Arrow Highway and Santa Anita. Along the way it services Claremont, La Verne, University of La Verne and Covina. Passengers can transfer to Foothill Transit Lines 187, 855, 292, 291, 284, 851, 488, 498, 281, 280, 185 and 494 and Metro 78. The line currently has 61 weekday trips and 50 weekend trips, and operates at 30 minute





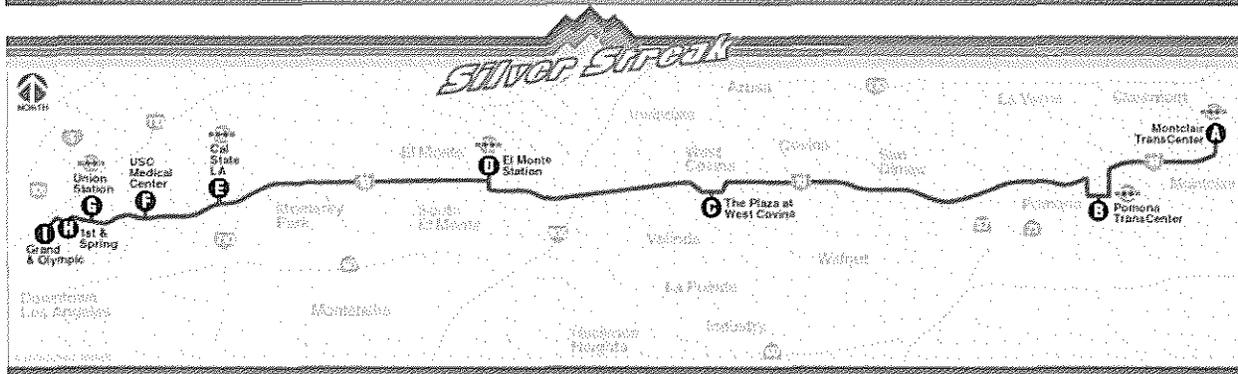
headways during the week. The line is the 6<sup>th</sup> most traveled line with 391,367 boardings in FY13, 82 percent of which are weekday boardings.

FY13 on time performance for the line is 70.17 percent and is the 4<sup>th</sup> contributor to OTP (6.12 percent). It is the 3<sup>rd</sup> largest generator of complaints with 60 complaints of 993 (6 percent). The line has ridership to support decreasing the headway to 20 minutes.

Option	Cost	Discussion
Substantial	\$517,844.17	<p>➤ Increase frequency to 20 minutes between 6 a.m. and 6 p.m. during the week</p> <p>Increasing bus frequencies all day can do the dual service of helping relieve heavy loads during busy periods and make the service more reliable to customers. This may also make the service more attractive to potential riders, and well as keep our current customers satisfied. Increasing frequencies should reduce wait time for customers and could perhaps lead to quicker trip times if the bus has to stop less or takes less time to load customers since customers will be distributed more evenly among trips.</p>
Moderate	\$388,383.12	<p>➤ Increase frequency to 20 minutes between 6 a.m. and 8 a.m. and 10 a.m. and 5 p.m.</p> <p>This approach increases headways during the busiest travel periods for the line. This scenario has the same benefits as the Substantial approach. The only drawback to this approach is having inconsistent headways through the day which makes it a little harder for a customer to predict when their bus will arrive, and thus makes the service seem, perhaps, slightly less reliable.</p>
Conservative	\$215,768.40	<p>➤ Increase frequency to 20 minutes between 8 a.m. and 10 a.m. and 2 p.m. and 5 p.m.</p> <p>This approach increases headways during the typical commuting times, which aren't necessarily the heaviest travel times for the line. However, increasing the trip frequency during this time period will help customers get to and from work a little faster by reducing their wait times.</p>

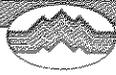


Line 707 – Silver Streak



The Silver Streak is Foothill Transit’s flagship line providing limited stop service between Montclair and Downtown Los Angeles. The route is about 38 miles. It has 155 weekday trips and 82 weekend trips. The Silver Streak is the 2<sup>nd</sup> most traveled line with 622,977 boardings in FY13; 78 percent of boardings were during the week. During peak times, headways are as frequent as seven minutes, and during off peak times buses travel on 20-30 minute headways.

For FY13, on time performance for the line is 66.98 percent and is the second largest contributor to overall on time performance. It is the top generator of complaints with 157 total complaints or 15.8 percent of the total. No changes are recommended at this time, as the ridership cannot support increased headways. Planning will continue to monitor the lines’ on time performance for other ways to improve performance.



**Section 5: Recommended Enhancements**

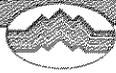
Upon review of each of the proposed service scenarios by line, the following recommendations are proposed. Pending Board approval, we will continue to study their feasibility. In addition, public comment on the proposed changes will be sought since many exceed the threshold of changing more than 25 percent of the line and a Title VI Equity Analysis will need to be completed before the changes can go into place.

Each option was considered individually to ensure that it is the most strategic change that can be made – in an essence, that these service enhancements will give Foothill Transit the most “bang for its buck.”

Line	Option	Cost	Discussion
178	Moderate	\$406,396.61	<ul style="list-style-type: none"> <li>➤ Increase frequencies from 30 minutes to 20 minutes on the weekday, from 10:00 a.m. to 4:00 p.m. This is the period with highest ridership.</li> <li>➤ Extend night service additional hour to coincide with mall closing hours, on weekdays.</li> </ul>
185	Moderate	\$126,724.56	<ul style="list-style-type: none"> <li>➤ Add 6 trips to standardize headway to 30 minutes between 9:50 and 12: 45 on weekdays</li> <li>➤ Extend night service an additional hour to match mall hours on weekdays</li> </ul>
187	Limited Stops	No additional cost for service	<ul style="list-style-type: none"> <li>➤ Create a limited stop variant on the same route that serves approximately 30% of the local stops.</li> </ul>
195	Conservative	\$65,722.15	<ul style="list-style-type: none"> <li>➤ Add 3 trips each way during the week between 9:45 and 1:45 to fill the gap in service</li> </ul>
281	Conservative	\$190,098.78	<ul style="list-style-type: none"> <li>➤ Increase frequency to 20 minutes between 6 a.m. and 10 a.m. and 2 p.m. and 5 p.m on weekdays. These periods have high ridership and are the times when people are commuting to and from work.</li> </ul>
286	Moderate	\$80,654.65	<ul style="list-style-type: none"> <li>➤ Extend operating hours to coincide with 1) service times of buses operating out of Pomona TransCenter and, 2) closing of Brea Mall.</li> </ul>
289	Conservative	\$98,330.51	<ul style="list-style-type: none"> <li>➤ Extend operating hours on weekday evenings to ensure that the ridership program at Mt. San Antonio College can be</li> </ul>



			successful in generating increased ridership.
480	Moderate	\$371,969.47	➤ Increase frequency to 20 minutes between 7 a.m. and 9 a.m. and 3 p.m. and 5 p.m. during the week; Increase frequency to 30 minutes between 9:30 a.m. and 1:30 p.m. during the week. These are the busiest travel times for the line.
482	Moderate	\$40,113.94	➤ Additional stop serving Industry Metrolink station on the weekdays to coincide with the opening of the Industry Park and Ride ➤ Additional trip in the morning serving Industry Metrolink station on the weekdays to coincide with the opening of the Industry Park and Ride
486	Limited Stops	No additional cost for service	➤ Create a limited stop variant on the same route that serves approximately 30% of the local stops.
492	Moderate	\$388,383.12	➤ Increase frequency to 20 minutes between 6 a.m. and 8 a.m. and 10 a.m. and 5 p.m. during the week. These are the busiest travel periods for the line.
<b>Total</b>			<b>\$1,768,393.79</b>



**Section 6. Next Steps**

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Should the Executive Board approve these service enhancements, funding for the improvements will be included in the proposed FY 2014 budget.

An analysis of service equity will be prepared as required by the Federal Transit Administration’s Title VI requirement. This will document that the proposed service enhancements are not discriminatory.

Foothill Transit’s Governing Board and member jurisdictions will be notified of these proposed service enhancements and comments on these changes will be requested. While an official public hearing is not required, customers will be notified of these proposed enhancements and customer feedback will be requested and considered.

Once this work is complete, a final list of proposed changes will be presented to the Executive Board for final approval.

**Section 7. Proposed Timeline**

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May 2013	Governing Board and Member Jurisdiction Notification
June 2013	Conduct community outreach (to include customer notification of the proposed enhancements via Footnotes, postal and electronic mailing, and town hall meeting)
July 2013	Analyze customer feedback
August 2013	Propose finalized service enhancements to the Foothill Transit Executive Board for approval
September 2013	Implement finalized service enhancements

**Budget Impact**

Recommended service enhancements of \$1,768,393.79 can be funded by Foothill Transit’s Measure R allocation.

Sincerely,

  
Joseph Raquel  
Planning Director

  
Doran J. Barnes  
Executive Director



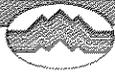
Appendix 1: Schedule Adherence Complaints by Route through January 2013

Route	# Complaints Schedule Adherence
707	57
499	52
699	42
480	39
498	37
187	35
281	34
492	26
486	17
185	16
493	16
178	14
280	14
488	13
497	12
272	8
285	8
690	8
481	7
197	5
282	5
284	5
286	5
482	5
494	3
195	2
269	2
291	2
289	1
851	1
855	1
274	0
292	0
853	0



Appendix 2: Ridership By Route through January 2013

Route	Total Ridership
Route 187	850,839
Route 486	566,809
Route 707	563,785
Route 178	400,601
Route 280	395,722
Route 492	366,620
Route 482	307,994
Route 480	307,041
Route 291	284,275
Route 281	243,495
Route 488	239,610
Route 185	227,194
Route 282	143,659
Route 699	115,963
Route 498	107,278
Route 493	78,558
Route 197	76,920
Route 499	71,822
Route 286	64,938
Route 274	61,035
Route 285	56,483
Route 269	55,544
Route 272	48,730
Route 289	46,979
Route 497	44,343
Route 195	42,332
Route 690	36,315
Route 481	32,026
Route 494	20,551
Route 284	16,318
Route 292	16,001
Route 853	13,576
Route 855	12,556
Route 851	10,246
Route 854	6,472



Appendix 3: On-Time Performance By Route through January 2013

Route #	% On-Time
269	88.52
274	85.79
292	85.23
197	84.31
291	82.13
854	77.74
280	77.35
195	76.27
282	75.8
281	75.44
187	75.42
855	74.49
272	74.46
853	74.06
285	72.88
482	72.72
286	72.18
178	71.68
185	71.38
291-2	70.92
492	70.23
284	69.75
851	69.27
494	69.11
481	67.03
707	66.73
480	66.15
289	64.98
486	64.07
493	60.43
499	60.18
488	60.12
690	59.57
699	57.07
498	51.69
497	50.58